

## REMARKS

Prior to a first Office Action in this application, Applicants request that original claims 1-19, 23-43, and 47 be canceled, original claims 21, 50, and 51 be amended and new claims 52-57 be added. These amendments and new claims do not involve any new matter or objectionable changes. When the Examiner takes this application up for action, he is requested to take the foregoing into account.

### I. CLAIM AMENDMENTS

Applicants' attorney has made amendments to the claims as indicated above. Claims 20-22, 44-46, and 48-51 were rejected in the parent patent application (serial number 09/491,959), and are presented anew. Amendments to claims 21, 50, and 51 have been made to correct typographical errors in the originally filed claims.

### II. DRAWINGS

Prior to a first Office Action in this application, Applicants request that FIG. 7B be added to the drawings that were filed on January 26, 2000. This figure was inadvertently misplaced in the file as originally filed. Reference is made to FIG. 7B in the specification as follows: "FIGs. 7A and 7B are flow charts presenting exemplary method steps used to practice one embodiment of the present invention." - page 5, lines 16-17; "FIGs. 7A and 7B describe a flow chart presenting exemplary method steps used to practice one embodiment of the present invention." - page 16, lines 16-17; and "Turning to FIG. 7B, the subsequent segments...etc.)". - page 17, lines 22-30. The addition of FIG. 7B does not involve any new matter or objectionable changes. When the Examiner takes this application up for action, he is requested to take the foregoing into account.

### III. THE REFERENCES CITED IN FINALLY REJECTING THE REPRESENTED CLAIMS

#### A. The Ebisawa References

U.S. Patent Nos. 6,263,504, issued July 17, 2001 to Ebisawa (the Ebisawa '504 reference) and U.S. Patent 6,144,400, issued November 7, 2000, to Ebisawa (the Ebisawa '400 reference) disclose a

data delivery system, data receiving apparatus, and storage medium for video programs which supports an NVOD system. A data storage unit is provided in a receiving apparatus, whereby a video program can be provided with an instantaneous response equivalent to the VOD system. Namely, the data of the first part of the video data is stored in the data storage unit in advance. When there is a request for reproduction, that stored data is immediately reproduced. The data after the first data is sent from a transmitting apparatus in the same way as an NVOD system heretofore. Buffering is performed in the receiving apparatus, and the resultant data is reproduced continuous with the data of the first part.

B. The Ganek Reference

U.S. Patent No. 5,724,646, issued March 3, 1998, to Ganek et al. (the Ganek reference) discloses a system, method and apparatus for Video-on-demand (VOD) satisfying the desire of 'surfers'. The process entails a server operating in a standard Near-Video-on-demand (NVOD) mode, whereby it repeatedly transmits multiple copies of each program on separate channels. Each copy is delayed by a staggered time interval. The server also repeatedly transmits a beginning portion of each NVOD program of a duration up to the staggered time interval. The invention provides a way to fulfill a VOD user requests asynchronous with the start of a NVOD transmission but which still makes primary use of the NVOD transmission for that requestor. The invention further advantageously provides fixed asset utilization in a predictable manner.

C. The Inoue Reference

U.S. Patent No. 5,729,280, issued March 17, 1998, to Inoue et al. (the Inoue reference) discloses a near video-on-demand signal receiver having a memory which provides for VCR like functions. A video signal receiver receives a plurality of video channels simultaneously carrying, offset by a transmission interval, a single video program, selects one channel from which to obtain the program for display to a user, and achieves a pause function in the display of the transmitted video program by temporarily storing a segment of the video program equal to the length of the transmission interval and obtaining the remainder of the program at a later time from the same or another channel.

#### IV. FINAL OFFICE ACTION PRIOR ART REJECTIONS

##### A. Rejections Under 35 U.S.C. § 102(e)

In paragraph 3, the Final Office Action rejected claims 20, 21, 23, 44, 45, 47, 50, and 51 under 35 U.S.C. § 102(e) as unpatentable over Ebisawa '504.

With Respect to Claims 20, 21, 23, 40, 44, 45, 47, 50, and 51: Claim 20 recites:

*A method of storing a video program in response to a user demand, wherein the video program is repeatedly transmitted on one of a plurality of channels, each repeated transmission separated in time from a preceding transmission of the video program by a retransmission interval and being transmitted on a different channel than the previous transmission, the method comprising the steps of:*

*selecting at least one of a plurality of video programs; and*

*receiving a plurality of time segments of the selected video program in parallel, wherein each of the time segments is received on a different one of the channels.*

According to the Final Office Action:

“Ebisawa discloses after storing the first segment, the receiving unit 20 selects one channel and for the remainder of the program and stores the remainder of the program (column 6, lines 20-34); the first segment is received and the remainder of the program (another segment) is received from a second channel, which meets the limitation on receiving a plurality of segments on different channels.

“Ebisawa discloses each of the remaining 10 second segments from the program are stored on head A, and head B sequentially, thereby overwriting each of the previously stored 10 minute segments (col. 6, lines 39-54), which meet the limitation on parallel.”

The Office Action refers to the following portions of the Ebisawa reference:

Simultaneously with that processing, the control unit 24 requests transmission of the data starting after the 10 minutes of that program PROGRAM-1 from the transmitting apparatus 10 via the communication unit 21.

The transmission request signal for the video data of that program PROGRAM-1 input to the transmitting apparatus 10 via the communication path 10 is input via the communication unit 13 to the control unit 14. The control unit 14 controls the selecting unit 12 so as to find the channel at which the video data starting after the 10 minutes of the program PROGRAM-1 is output earliest from among the n number of channels of video data transmitted from the n number of data transmitting units 11.sub.-1 to 11.sub.-n and selects that channel of the video data. (col. 6, lines 20-34)

The receiving apparatus 20, when receiving the video data starting after the 10 minutes of the program PROGRAM-1 from the transmitting apparatus 10, sequentially stores this by the head B in the first storage region W-1 of the reception data storage region 27 of the MO disc 25 of the data storage unit 22. When the data for 10 minutes, that is, from the 10th minute to the 20th minute of the program PROGRAM-1, is stored in the first storage region W-1, the reception video data is subsequently stored by the head B in the second storage region W-2. Thereafter, similarly, 10 minute portions of video data are sequentially stored in the first storage region W-1 and the second storage region W-2. Note that, when storing the data again in the same storage region, the previously stored data is updated and subsequently erased, but as will be mentioned later, the previous data has been read out by the head A at that time, so there is no problem. (col. 6, lines 39-54)

However, claim 20 recites *receiving* a plurality of time segments of the selected program in *parallel*. The recited “in parallel” feature is directed to the process of receiving the time segments, not to the separate operations of *retrieving* the previously stored segments while storing the newly received segments. Further, in the Ebisawa reference, the stored program is not “*received on a different one of said channels*” as recited in claim 20. Accordingly, the Applicants believe that claim 20 is allowable over the Ebisawa reference.

Claims 44, 48, and 50 recite features analogous to those of claim 20 and are patentable for the same reasons.

B. Rejections under 35 U.S.C. § 103(a)

1. Rejection of claims 20, 21, 23, 44, 45, 47, 50, and 51 over Ganek in View of Ebisawa ‘400

In paragraph 4, the Final Office Action rejected claims 20, 21, 23, 44, 45, 50, and 51 as unpatentable according to 35 U.S.C. § 103(a) under the Ganek reference in view of the Ebisawa ‘400 reference.

With Respect to Claim 20: Paragraph 4 of the Final Office Action indicates:

“Ganek discloses the first segment is presented to the user on a secondary channel while receiving and storing the previously commenced programming on a primary channel (column 6, line 54 - column 7 line 24), which meets the limitation on receiving in parallel. Ganek discloses the previously commenced NVD program (one segment) is spliced onto the conclusion of the beginning portion of the requested program (another segment) (column 4, lines 33-42), which meets the limitation on a plurality of time segments of a selected video program in parallel.”

The referred-to portions of the Ganek reference are reproduced below:

FIG. 3 illustrates an embodiment of a method according to the present invention of providing video-on-demand of the type wherein a VOD-server repeatedly transmits a video program to a viewbox at a staggered time interval Tstag over a plurality of primary channels in a transmission line. At step 410 a VOD-server repeatedly transmits to a viewbox a beginning portion of each video program over a plurality of secondary channels of a transmission line. The start of each beginning portion is offset by a fixed percentage of Tstag.

At step 420, the VOD-server makes available program control and timing information over the transmission line to each viewbox. At step 430, the user inputs a program request which is asynchronous to the start of any primary channel offering. At step 440, the viewbox uses the VOD-server transmitted menu, control, and timing information to: tune to a secondary channel containing the nearest not yet commenced beginning portion of the requested video program, for output by the viewbox; and concurrently tune to the

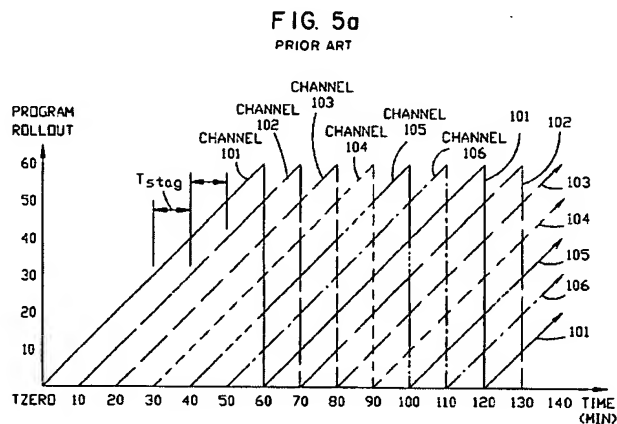
immediately previously commenced primary channel containing the requested video program and store it in a buffer. The secondary channel may be served for a time equal to the NVOB stagger interval,  $T_{stag}$ . The buffer storage is preferably done in a recirculating manner in order to minimize the size of the buffer 180 required. When the buffer end (top) is reached, filling (STORE) is continued by overwriting the buffer 180 from its beginning (bottom). Buffer storage may commence offset from the immediately previous program start by an amount corresponding to  $T_{stag}$  from the actual start so as to be contiguous with the conclusion of the secondary channel. The primary channel service connection is continued for the remaining duration of the program. Those skilled in the art will appreciate that although the preferred embodiment is described in terms of staggered time interval  $T_{stag}$ , the secondary channel service and buffer storage commencement could be minimized to  $T_{br}$ , i.e., the tardiness of  $T_{req}$  from the start of the previous (already in progress) primary channel transmission, without departing from the true spirit and scope of the invention. (col. 6, line 54 - col. 7, line 24)

Returning now to FIG. 1, a buffer 180 is also associated with each viewbox 160 for storing the immediately previously commenced one of the NVOB programs associated with a request. Each viewbox is further associated with a dual selection and splicing mechanism (DSS) 150 for contiguously splicing the immediately previous transmission of the requested program to the conclusion of the beginning portion of the requested program for uninterrupted on-demand presentation to the requesting viewer on the TV 195. (col. 4, lines 33-42)

Claim 20 recites that video program (not only a *portion* of the program) is:

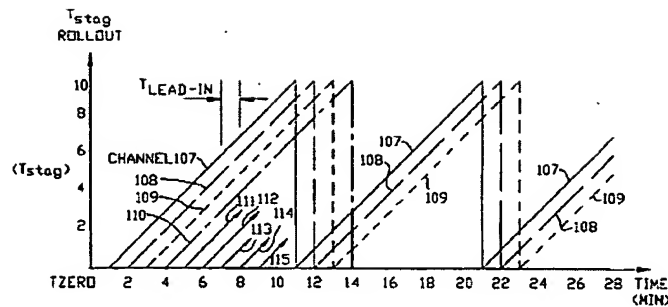
*"repeatedly transmitted on one of a plurality of channels, each repeated transmission separated in time from a preceding transmission of the video program by a retransmission interval and being transmitted on a different channel than the previous transmission".*

These features are disclosed in the Ganek reference by the repeated transmitting of the video program over a primary channel, as illustrated in FIG 5a below:



However, these features is not disclosed by the repeated transmission of the beginning *portion* of the video program as shown in FIG. 5b:

FIG. 5b



Claim 20 also recites:

*receiving a plurality of time segments of the selected video program in parallel, wherein each of the time segments is received on a different one of the channels*

Ganek does not disclose receiving a plurality of time segments of the selected video program in parallel, wherein each of the time segments is received on a different one of *the* channels referred to in the preamble (e.g. in FIG. 5a, channels 101-106). Instead, the first 10 minutes of the video program is received on a *different* channel (one of channels 107-115 of FIG. 5b) while the remainder of the video program is received on *one* of *the* channels and buffered for later viewing. Ganek, in fact, does not disclose a method in which a complete video program is stored at all. Instead, it teaches tuning to a first portion of the video portion, and receiving, *on one channel*, the remainder of the video program for storage in a circular buffer. While the difference in words is small, the difference is nonetheless adequately expressed in the claims, and the difference in concept, execution, and effect is great.

The Ebisawa '400 reference likewise fails to disclose these features.

With Respect to Claim 44: Claim 44 recites features analogous to those of claim 20 and is allowable for analogous reasons.

With Respect to Claim 48: Like claims 20 and 40, claim 48 recites that the video program is transmitted on one of a plurality of channels and that the tuner receives multiple segments of the video program in parallel, each received on one of *the* plurality of channels. Further, claim 48 recites that the storage device "*stores subsequent segments of the selected video program in parallel while retrieving*

the pre-stored first segment of the selected video program. As described above, this is not disclosed in either the Ganek or Ebisawa references.

With Respect to Claim 50: Claim 50 recites:

*An apparatus for providing a video program transmitted in segments on a plurality of channels in response to a user demand, comprising:*

*an input device for accepting a selection of at least one of a plurality of video programs for VOD service;*

*a tuner for receiving time segments of the selected video program in parallel, wherein each segment is received on one of the plurality of channels; and*

*a storage device, for storing the time segments of the selected video program in parallel wherein each of the time segments is received on a different one of the channels.*

The Final Office Action rejected claim 50 on the same basis as claim 20 and indicated that the Ganek reference discloses the viewbox for accepting user selection and a tuner. However, unlike claim 20, claim 50 recites that the storage device “stores segments of the selected video program in parallel wherein each of the time segments is received on a different one of said channels.” As far as the Applicants can ascertain, neither the Ganek and Ebisawa references teach a storage device which stores segments of a video program in parallel. Ganek does not ... the viewbox tunes one tuner to the secondary channel to receive the nearest not yet commenced beginning portion of the video program (and presents this to the viewer) while the storage device stores the immediately previously commenced video program. This does not teach *storing* time segments received on different channels in parallel. Likewise, the Ebisawa reference fails to disclose *storing* segments of a video program *in parallel* wherein each of the time segments are received on a different one of the channels.

2. Rejection of Claims 20, 21, and 23 over Inoue in view of Ebisawa ‘400

In paragraph 5, claims 20, 21, and 23 are rejected as unpatentable under 35 U.S.C. § 103(a) over Inoue in view of Ebisawa.

With Respect to Claim 20: According to the Final Office Action:

“Inoue [sic] discloses different channels carrying a video program each offset by a time interval (col. 5, line 59 - column 6, line 9). Inoue discloses the system stores the first segment prior to user request, then reproduces the stored segment after the user request and stores the rest of the program (another segment) from another channel (column 8, lines 35-

46), which meets the limitation on receiving in a plurality segments each on a plurality of channels.

“Innoe fails to disclose storing in parallel. Ebisawa discloses each of the remaining 10 minute segments from the program are stored on head A, and head B sequentially, thereby overwriting each of the previously stored 10 minute segments (column 6, lines 39-54), which meets the limitation on parallel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Innoe to store the store in parallel as taught by Ebisawa in order to have minimal waiting time in a NVOD system.”

The portions of the Inoue reference cited above are reproduced below:

The pause function of the present invention will be explained in conjunction with FIGS. 2A and 2B which are illustrative timing diagrams of channels in a time interval transmitting system. FIG. 2A illustrates seven channels CH1-CH7 carrying a particular video program having a duration of two hours. The beginning and end of each program transmission is indicated by reference letters "a" and "b", respectively, along with a subscript identifying the particular broadcast segment. Intermediate positions in each program transmission are indicated by reference letters "c," "d" and "e," accompanied by a subscript identifying the particular broadcast segment.

As shown, broadcasting of the program commences once every seventeen minutes and continues consecutively. Thus, a user need wait no more than seventeen minutes for a new broadcast of the program to occur. Correspondingly, hard disk drive 15 has at least enough storage capacity to store seventeen minutes of processed video signals. (col. 5, lines 59 - col. 6, line 9)

At a later time T.sub.3, the user enters a resume command into user interface 106 to end the pause and resume display of the video program. In response to corresponding user input signals generated by user interface 106, microcomputer 109 controls read/write controller 18 to cause hard disk 15 to reproduce (read) data for supply to buffer 16. Additionally, microcomputer 109 controls switch 105 to couple playback processor 17 with decoder 108. Disk drive 15 reproduces from the disk data corresponding to that segment of the program recorded between times c.sub.4 and d.sub.4. The reproduced data is converted by playback processor 17 into appropriate video signals for supply through switch 105 to decoder 108. As described above, decoder 108 decodes the video signals and outputs the decoded signals for further processing, if necessary, and display. (col. 6, lines 39-54)

According to another mode of operation of the present invention, the near video-on-demand signal receiver pre-stores the first segment of a desired video program in the buffer memory apparatus. When a user requests reception and display of the video program, the pre-recorded segment is immediately reproduced and displayed while the receiver scans the channels carrying the program for the remaining segment of the program. Once a transmission of the remaining segment is found, the corresponding video signals are received, stored, reproduced, and displayed in the manner described above to seamlessly present the entire video program to the user. (col. 8, lines 35-46)

However, as described above with respect to the rejection under 35 U.S.C. §102(e), claim 20 recites *receiving* a plurality of time segments of the selected program in *parallel*. The recited “in parallel” feature is directed to the process of receiving the time segments, not to the separate operations of *retrieving* the previously stored segments while storing the newly received segments.



Further, the stored program is not “*received on a different one of said channels*”. Even when combined, the Inoue and Ebisawa ‘400 references do not disclose the features of claim 20.

The Applicants also respectfully disagree that there is a teaching to modify Inoue to receive the plurality of time segments of the selected video program in parallel to “have minimal waiting time in a NVOD system” as suggested by the Final Office Action. First, Inoue teaches a system in which there is essentially *no* waiting time, so “minimal waiting time” would not motivate one of ordinary skill to modify Inoue:

According to another mode of operation of the present invention, the near video-on-demand signal receiver pre-stores the first segment of a desired video program in the buffer memory apparatus. When a user requests reception and display of the video program, the pre-recorded segment is immediately reproduced and displayed while the receiver scans the channels carrying the program for the remaining segment of the program. Once a transmission of the remaining segment is found, the corresponding video signals are received, stored, reproduced, and displayed in the manner described above to seamlessly present the entire video program to the user. (col. 8, lines 35-46)

Inoue also teaches supporting pause and similar functionality by switching to appropriate channels, not by rapid storing of the media program (see, for example, FIGS. 2a-4b and the description related thereto).

Accordingly, claim 20 is allowable over the references of record.

## V. DEPENDENT CLAIMS

Dependent claims 21, 22, 45, 46, and 49 incorporate the limitations of their related independent claims, and are therefore patentable on this basis. In addition, these claims recite novel elements even more remote from the cited references. Accordingly, the Applicants respectfully request that these claims be allowed as well.

## VI. NEW CLAIMS

New claims 52-57 are presented for the first time in this Amendment. Because the prior art of record does not disclose receiving and pre-storing portions of a first segment of a video program on a plurality of channels in parallel, new claims 52-57 are patentable over the prior art of record, and the Applicants respectfully request the allowance of these claims as well.